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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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DRIGGS, LUCAS, BRUBAKER & HOGG CO. L.P.A.
38500 CHARDON ROAD
DEPT. IBU
WILLOUGHBY HILLS, OH 44094

EXAMINER	
HOLLINGTON, JERMELE M	

ART UNIT	PAPER NUMBER
2829	

DATE MAILED: 10/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/605,449	CONTI ET AL.	
	Examiner	Art Unit	
	Jermele M. Hollington	2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-12 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-12 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Base on the conversion with applicants' representative, Mr. Hogg, and examiner's supervisor, Mr. Nestor Ramirez, the examiner is withdrawing the previous Office Action mailed on September 22, 2005 and declining the entry of Amendment After Final filed on September 1, 2005.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 4-7 and 10-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Gamache et al (6577146).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claim 1, Gamache et al disclose [see Figs. 1-2] a method of controlling the burning in of at least one I/C chip (IC chip 12) in a burn in tool (test fixture 8), wherein said tool (8) has a device (socket 22) for mounting each chip (12) to be burned in, and a power source

(power source 22) to supply electrical current to burn in each chip (12), comprising the steps of: continuously monitoring [via computer 48] at least one electrical value input to each chip (12) selected from the group of current, voltage and power, and varying the voltage [via combination of computer 48, power sensor 46 and power source 44] to maintain at least one of the values at or below a given value.

Regarding claim 4, Gamache et al disclose each device temperature is monitored [via chip heat sensor 42] and the voltage to each device is varied [via combination of computer 48, power sensor 46 and power source 44] to maintain the device (22) at or below a given temperature.

Regarding claim 5, Gamache et al disclose a heat sink (heat sink 28) in contact with the device (22).

Regarding claim 6, Gamache et al disclose the device temperature of each device (22) is monitored [via chip heat sensor 42] and the temperature of the heat sink (28) is varied [via computer 48] to maintain the device temperature at a given value.

Regarding claim 7, Gamache et al disclose a burn in tool (test fixture 8) for burning in at least one I/C chip (IC chip 12) comprising: a structure (socket 22) for mounting each chip (12) to be burned in; a power source (power source 44) to supply electrical current to burn in each chip; a structure (computer 48) for continuously monitoring at least one electrical value input to each chip (12) selected from the group of current, voltage and power, and a structure (combination of power source 44 and power sensor 46) to vary the voltage to maintain at least one of the values at or below a given value.

Regarding claim 10 Gamache et al disclose a monitor (chip heat sensor 42) to continuously monitor the temperature value of each chip (12) being burned in and wherein the voltage is varied [via combination of computer 48, power sensor 46 and power source 44] to maintain the temperature value of each device at a given value.

Regarding claim 11, Gamache et al disclose a heat sink (heat sink 28) is in contact with each device (22).

Regarding claim 12, Gamache et al disclose the tool (8) has a heat sink (heat sink 28) and temperature monitor (chip heat sensor 42) for each device (22) and each heat sink (28) has means (temperature sensor 38) to control the temperature of the heat sink (28), and the temperature control means [via combination of computer 48, power sensor 46 and power source 44] is varied to maintain the temperature value of each device (22) at a given value.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 2-3 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gamache et al (6577146) in view of Iino et al (5568054).

Regarding claim 2, Gamache et al disclose [see Figs. 1-2] a method of controlling the burning in of at least one I/C chip (IC chip 12) in a burn in tool (test fixture 8), wherein said tool (8) has a device (socket 22) for mounting each chip (12) to be burned in, and a power source (power source 22) to supply electrical current to burn in each chip (12), comprising the steps of: continuously monitoring [via computer 48] at least one electrical value input to each chip (12) selected from the group of current, voltage and power, and varying the voltage [via combination of computer 48, power sensor 46 and power source 44] to maintain at least one of the values at or below a given value. However, Gamache et al do not disclose maintain the current value at or below a given value. Iino et al disclose [see Fig. 6] controlling the burning in of at least one I/C chip (IC chip on wafer W) in a burn in tool (inspection section 12), wherein said tool (12) has a device (probe card 20) for mounting each chip (IC on wafer W) to be burned in, and a power source (power source 40) to supply electrical current to burn in each chip (IC on wafer W), comprising the steps of: continuously monitoring [via measuring section 41] at least one electrical value input to each chip (on wafer W) wherein the current value is maintain at or below a given value [see col. 2, lines 9-30, col. 5, lines 3-63, col. 6, lines 29-37 and col. 7, line 47-col. 8, line 13]. Further, Iino t al teach that the addition of maintaining current value at or below given value is advantageous because it prevents over current as well as to detect defects of the IC in a wafer. It would have been obvious to a person having ordinary skill in the art at the time the

invention was made to modify the apparatus of Gamache et al by adding a measuring section as taught by Iino in order to prevent over current as well as to detect defects of the IC in a wafer.

Regarding claim 3, Gamache et al disclose [see Figs. 1-2] a method of controlling the burning in of at least one I/C chip (IC chip 12) in a burn in tool (test fixture 8), wherein said tool (8) has a device (socket 22) for mounting each chip (12) to be burned in, and a power source (power source 22) to supply electrical current to burn in each chip (12), comprising the steps of: continuously monitoring [via computer 48] at least one electrical value input to each chip (12) selected from the group of current, voltage and power, and varying the voltage [via combination of computer 48, power sensor 46 and power source 44] to maintain at least one of the values at or below a given value. However, Gamache et al do not disclose maintain the power value at or below a given value. Iino et al disclose [see Fig. 6] controlling the burning in of at least one I/C chip (IC chip on wafer W) in a burn in tool (inspection section 12), wherein said tool (12) has a device (probe card 20) for mounting each chip (IC on wafer W) to be burned in, and a power source (power source 40) to supply electrical current to burn in each chip (IC on wafer W), comprising the steps of: continuously monitoring [via measuring section 41] at least one electrical value input to each chip (on wafer W) wherein the power value is maintain at or below a given value [see col. 2, lines 9-30, col. 5, lines 3-63, col. 6, lines 29-37 and col. 7, line 47-col. 8, line 13]. Further, Iino t al teach that the addition of maintaining current value at or below given value is advantageous because it prevents over current as well as to detect defects of the IC in a wafer. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the apparatus of Gamache et al by adding a measuring section as taught by Iino in order to prevent over current as well as to detect defects of the IC in a wafer.

Regarding claim 8, Gamache et al disclose a burn in tool (test fixture 8) for burning in at least one I/C chip (IC chip 12) comprising: a structure (socket 22) for mounting each chip (12) to be burned in; a power source (power source 44) to supply electrical current to burn in each chip; a structure (computer 48) for continuously monitoring at least one electrical value input to each chip (12) selected from the group of current, voltage and power, and a structure (combination of power source 44 and power sensor 46) to vary the voltage to maintain at least one of the values at or below a given value. However, Gamache et al do not disclose maintain the current value at or below a given value. Iino et al disclose [see Fig. 6] controlling the burning in of at least one I/C chip (IC chip on wafer W) in a burn in tool (inspection section 12), wherein said tool (12) has a device (probe card 20) for mounting each chip (IC on wafer W) to be burned in, and a power source (power source 40) to supply electrical current to burn in each chip (IC on wafer W), comprising the steps of: continuously monitoring [via measuring section 41] at least one electrical value input to each chip (on wafer W) wherein the current value is maintain at or below a given value [see col. 2, lines 9-30, col. 5, lines 3-63, col. 6, lines 29-37 and col. 7, line 47-col. 8, line 13]. Further, Iino t al teach that the addition of maintaining current value at or below given value is advantageous because it prevents over current as well as to detect defects of the IC in a wafer. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the apparatus of Gamache et al by adding a measuring section as taught by Iino in order to prevent over current as well as to detect defects of the IC in a wafer.

Regarding claim 9, Gamache et al disclose a burn in tool (test fixture 8) for burning in at least one I/C chip (IC chip 12) comprising: a structure (socket 22) for mounting each chip (12) to be burned in; a power source (power source 44) to supply electrical current to burn in each chip;

a structure (computer 48) for continuously monitoring at least one electrical value input to each chip (12) selected from the group of current, voltage and power, and a structure (combination of power source 44 and power sensor 46) to vary the voltage to maintain at least one of the values at or below a given value. However, Gamache et al do not disclose maintain the current value at or below a given value. Iino et al disclose [see Fig. 6] controlling the burning in of at least one I/C chip (IC chip on wafer W) in a burn in tool (inspection section 12), wherein said tool (12) has a device (probe card 20) for mounting each chip (IC on wafer W) to be burned in, and a power source (power source 40) to supply electrical current to burn in each chip (IC on wafer W), comprising the steps of: continuously monitoring [via measuring section 41] at least one electrical value input to each chip (on wafer W) wherein the power value is maintain at or below a given value [see col. 2, lines 9-30, col. 5, lines 3-63, col. 6, lines 29-37 and col. 7, line 47-col. 8, line 13]. Further, Iino t al teach that the addition of maintaining power value at or below given value is advantageous because it prevents over current as well as to detect defects of the IC in a wafer. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the apparatus of Gamache et al by adding a measuring section as taught by Iino in order to prevent over current as well as to detect defects of the IC in a wafer.

Conclusion

6. Applicant's arguments filed May 23, 2005 have been fully considered but they are not persuasive.

Regarding claim 1, the applicants' argue: "... it should be noted that Gamache et al do not teach or suggest varying an input of any parameter to maintain any value at the chip."

In regard to the above argument, the examiner disagrees. The limitation states: "continuously monitoring at least one electrical value input to each chip selected from the group of current, voltage and power, and varying the voltage to maintain at least one of the values at or below a given value." In col. 5, line 35- col. 6, line 2 it states:

> "A program then runs the initial step to perform, at low power, as described above, the test to determine the measured thermal resistance of each device. The computer compares the calculated maximum allowable value of the thermal resistance with the measured value for each chip to determine if the measured value for any chip is greater than the calculated maximum allowable value...If all chips are within limits, i.e., have a measured thermal resistance less than the calculated maximum allowable value, then the program proceeds to the next step where the actual burn-in tests are performed step by step until the end of the run.
>
> However, if there is one or more chips that are not within performance limitation, i.e. that have a thermal resistance at the interface between the heat sink 28 and the chip 12 greater than the calculated maximum allowable value, this is noted and the test run is not continued. The necessary corrective action can be taken as described above. Once the corrective action has been taken, the first step is again initiated and this is repeated until all of the devices fall within the allowable limits of calculated thermal resistance or that chip section 24 is disabled. At that time and only at that time does the burn-in and test procedure continue."

From the examiner's view base on the above section of Gamache et al, they determined the maximum power input to the IC chip, then start testing at low power and increasing power step by step until it reaches its performance limitation. If it is over its performance limitation, the test will not continue and corrective action will be taken and test run again until all ICs are within the limits.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jermele M. Hollington whose telephone number is (571) 272-1960. The examiner can normally be reached on M-F (9:00-4:30 EST) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (517) 272-2034. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jermele M. Hollington
Primary Examiner
Art Unit 2829

JMH
October 24, 2005